

The C·A·U·S·E

Careful Antibiotic Use to Prevent Resistance

from the Division of Bacterial and Mycotic Diseases

We are pleased to send you this inaugural copy of *The CAUSE*. We are introducing this newsletter to promote communication among CDC and the many partners who share an interest in halting the spread and decreasing the incidence of antibiotic resistance. As many of you know, a national campaign to reduce antimicrobial resistance through promotion of more judicious antibiotic use was launched in 1995. This campaign is comprehensive and extensive, encompassing public media, professional education, applied research and surveillance activities. Because of its many facets and multiple partners, we believe this quarterly news update will keep us together and move us toward our goal.

If we are to be successful in halting the spread of antimicrobial resistance, we must bring about a fundamental shift in the way that health care providers and the general public view the risks and benefits of each course of antibiotics. Accomplishing this shift in professional practice and national attitudes, and restraining the runaway problem of antimicrobial resistance ranks among one of the most important public health challenges of our time.

By working with new partners and harnessing the resources of collaborating organizations we have begun to see real progress in meeting this challenge. As we continue in this campaign we look forward to adding other partners.

Future issues of this bulletin will have specific themes, such as new educational techniques or the influence of agricultural antibiotic use. We also will include information on newly available educational materials, publications, and opportunities for research funding.

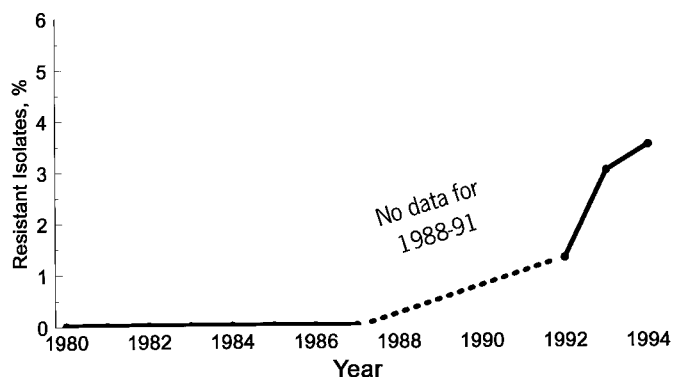


Figure 1. Rate of high-level penicillin resistance among 6721 invasive isolates of *Streptococcus pneumoniae*, United States, 1980 to 1994. Data from this CDC surveillance system were not reported from 1988 to 1991. (From: Butler JC, Hofmann J, Cetron MS, Elliott JA, Facklam RR, Breiman RE. The continued emergence of drug-resistant *Streptococcus pneumoniae* in the United States: an update from the CDC Sentinel Surveillance System. *J Infect Dis.* 1996;174:986-93)

James M. Hughes, MD
Director, NCID

CDC Program Activities and Progress to Date

Our campaign to promote judicious antimicrobial use has three major areas of activity: characterizing current practices, developing strategies and materials that will lead to changes in behaviors related to antimicrobial use, and implementing and evaluating intervention programs.

Characterizing current practices

We analyzed data from the National Ambulatory Medical Care Survey, focus groups of Georgia pediatricians and family physicians and parent telephone interviews. Some key findings emerged from these analyses: 1) doctors estimate that they could decrease antimicrobial use 10% to 50% without a negative impact; 2) doctors attribute overuse to patient expectations; 3) parents are more focused on obtaining help

Continued on page 2



for their child's illness than on getting an antibiotic; 4) there are indications that sub-optimal diagnostic and management practices are common; and 5) about three-quarters of outpatient antimicrobial use is for 5 respiratory diagnoses.

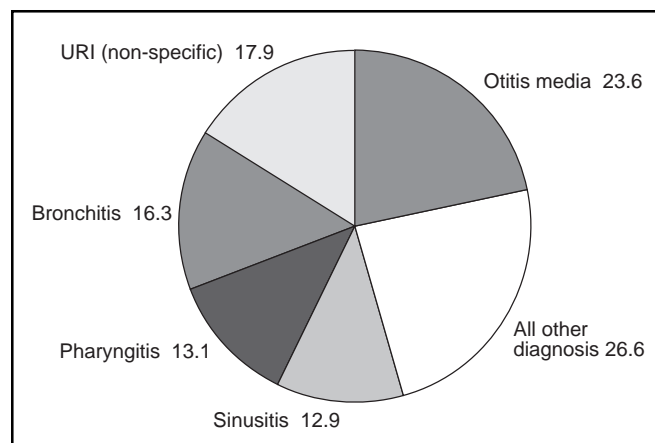


Figure 2. Indications for outpatient antimicrobial therapy in the U.S. in 1992, in millions of courses. (From McCaig L, Hughes J. Trends in antimicrobial drug prescribing among office-based physicians in the United States. *JAMA* 1995; 273:214-9.)

Developing strategies and materials

We have designed our intervention strategies to target both medical care providers and patients. A group from CDC, the American Academy of Pediatrics, and the American Academy of Family Physicians worked diligently to draft principles of judicious antimicrobial use for pediatric upper respiratory infections. To encourage the adoption of these principles, we are developing an educational package including a slide set, reprints of key articles and samples of patient education materials along with a curriculum for physician peer-education.

Our surveys show there is a perception among providers that patient expectations may encourage overuse of antibiotics. To overcome this, we will make patient education resources available to physicians for use during medical care visits to aid in physician-patient communication. A patient brochure is now available, and posters, a video that can be shown in waiting rooms, and disease or syndrome-specific materials are being developed.

Campaign partners have made appearances on television and radio news shows, and magazines such as *Readers Digest*, *Parenting*, and *McCall's* have carried articles on antimicrobial resistance.

Intervention programs

Three projects funded by CDC are underway to determine the impact of interventions promoting judicious antimicrobial use. The impact on antimicrobial use of medical peer and consumer education is being evaluated in managed care organizations in Boston and Seattle. Changes in antimicrobial use and impact on carriage of resistant pneumococci among

children in day care are being assessed in a project coordinated by the Marshfield Clinic in Wisconsin. Funding for a statewide intervention project has just been awarded.

Future plans

1997 is a key year for our program. In addition to continuing current activities, we plan to expand the focus to include adults, develop educational materials for use in medical training programs, and work more closely with state health departments and medical societies to take better advantage of local interest, energy and expertise.

Benjamin Schwartz, MD; and Scott Dowell, MD

Uses of Antimicrobial Agents on Animals and Produce

While much of the focus of the campaign deals with judicious antibiotic use by physicians treating respiratory diseases, use of antimicrobial agents in veterinary medicine and other areas of agriculture is also important. Judicious use of antimicrobial agents in agriculture will reduce the emergence and spread of resistant bacteria in animals and on produce, and minimize public health risks.

Antimicrobial agents are used widely in animals for therapy, prophylaxis or growth promotion and are also used on some fruits and vegetables. For example, the most common usage of streptomycin in the United States is on pears for the prevention of "fire blight." The public health consequence of this exposure is being debated widely. Despite differences in opinion, there is agreement that antimicrobial resistance emerges in relation to its use. Therefore, it is desirable to reduce unnecessary use in humans, animals and the environment. The Foodborne and Diarrheal Diseases Branch of the Division of Bacterial and Mycotic Diseases at CDC welcomes the opportunity to discuss public health issues concerning the use of antimicrobial agents in animals and the environment and to promote judicious use of such agents. To request further information about this subject call (404)639-2840.

Fred Angulo, DVM

Communicating the Findings and Message to the Public

If you picked up a copy of the December (1996) *Readers Digest*, then you couldn't miss the article that warned parents about indiscriminate use of antibiotics. The author interviewed parents whose children suffered acute illnesses due to antibiotic resistance and in one extreme example, a child

Continued on page 3

contracted meningitis that “robbed her of brain function.”

Articles such as these pose a Hobson's choice to health communicators: on one hand, we have the opportunity to reach millions of readers with information about antibiotic resistance. On the other hand, audiences may be hearing that super bugs are rampant and antibiotics should be avoided. One concern is that readers may feel helpless in coping with such news.

The judicious antibiotic use campaign aims to communicate information about resistance and to empower adults to talk with their health care providers and make prudent decisions about when to seek antibiotic treatment and when to avoid it.

Cynthia Coleman, PhD

Partners in The CAUSE

The American Academy of Pediatrics (AAP) and its Committee on Infectious Diseases (COID, The Red Book Committee) consider the overuse of antimicrobials a priority concern of local, national and worldwide importance. To that end, the AAP/COID has provided support to CDC in developing the set of principles for appropriate antimicrobial use in the treatment of common childhood respiratory infections and has been asked to review and comment on a pamphlet designed to aid practitioners in informing caregivers of the risk of antibiotic misuse and overuse. As opinion leaders in the pediatric community, members of the COID are advocating the judicious use of antibiotics through lectures, symposia and CME courses, both on a local and national level. Previews of the tripartite educational program, which combines principles, pamphlets and presentations, have been uniformly met with complimentary and enthusiastic responses from practitioners.

*S. Michael Marcy, MD
American Academy of Pediatrics Red Book Committee*

State Health Officials Join Campaign On Judicious Antibiotic Use

Another partner in the campaign to reverse the rapid spread of antibiotic-resistant bacteria is the Association of State and Territorial Health Officials (ASTHO), a group composed of the directors of all state health departments. Plans for the campaign were announced at a Baltimore news conference in September during the group's 1996 annual meeting. ASTHO will collaborate on surveys to gauge provider and consumer awareness, support mass media efforts and distribute educational materials to its local constituent groups.

“This super bacteria explosion is a public health crisis of the first order,” says Dr. Jack Dillenberg, ASTHO president and Director of the Arizona Department of Health Services. “If left unchecked, we face potentially devastating consequences, including widespread sickness and death from once-curable diseases.”

*Brad Christensen
Arizona Department of Health Services*

Pharmacists Communicate Information about Judicious Antibiotic Use

Pharmacists are a critical link in communicating information about health and treatment. For the past several years, the Gallup polls have reported that, among a list of 26 professions, pharmacists received the highest rating for honesty and ethical standards. The accessibility to pharmacists, who are well positioned for patient education, may be a factor in this rating. A physician-patient-pharmacist team approach is beneficial for both good care and rational antibiotic use.

CDC and the APhA have surveyed pharmacists to learn more about how and when they talk with patients about antibiotics and where they glean information about resistance.

*Lucinda Maine, PhD
American Pharmaceutical Association*

Note to readers: You will be able to receive future issues by electronic mail or hard copy. If you wish to receive your copy electronically send us your e-mail address or e-mail to cfj6@cdc.gov. We encourage you to share this issue with colleagues who did not receive a copy. The editors welcome comments and suggestions from readers. Forward these by mail to Lela F. Folkers, NCID/DBMD, MS C09, 1600 Clifton Road, Atlanta, GA 30333.

The "Judicious Antibiotic Use Campaign"		
Activity	Partners	Status
Assess current practices		
Analyze nationwide antibiotic use	NCHS	In progress
Survey diagnostic and treatment practices of Georgia physicians	GA. Div of Public Health, Emory Univ., GA. AAP	Completed
Survey physicians nationwide	ASTHO	In progress
Survey knowledge and attitudes of Georgia parents	Emory Univ.	Completed
Conduct physician and parent focus groups	ASM, Emory Univ.	Completed
Survey knowledge and attitudes of pharmacists	APhA	Completed
Develop materials and strategies		
Develop principles of judicious antibiotic use for pediatric upper respiratory infections	AAP, AAFP	Completed
Develop parent education pamphlet	AAP, ASM	Completed
Develop patient education video		In progress
Develop patient education posters	ASM	In progress
Promote mass media communication	ASTHO	In progress
Evaluate interventions		
Managed care intervention program	GHCPs, HCHP	In progress
Community intervention	Marshfield Clinic	In progress
Invasive disease surveillance	EIP sites	In progress

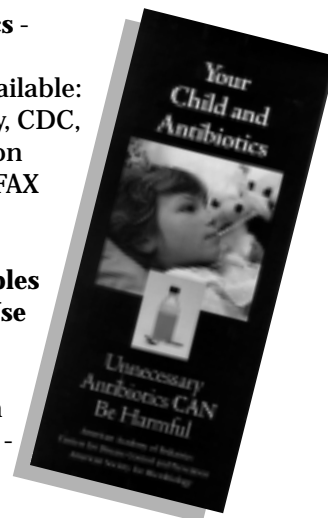
Key to acronyms: **NCHS** - National Center for Health Statistics; **ASTHO** - Association of State and Territorial Health Officials; **ASM** - American Society for Microbiology; **APhA** - American Pharmaceutical Association; **AAP** - American Academy of Pediatrics; **AAFP** - American Association of Family Physicians; **GHCPs** - Group Health Cooperative of Puget Sound; **HCHP** - Harvard Community Health Plan; **EIP** - Emerging Infections Project

Resources and Key Articles

Your Child and Antibiotics -

A newly released patient education pamphlet is available: write or fax Sandra Crosby, CDC, NCID, MS C23, 1600 Clifton Road, Atlanta, GA 30333, FAX (404)639-3970

Coming Soon: **Principles for Judicious Antibiotic Use in the Treatment of Common Childhood Respiratory Diseases** is in final stages of production - to be published late 1997.



Articles

Hamm R., Hicks R., Bemben D., *Antibiotics and respiratory infections: are patients more satisfied when expectations are met?* J Fam Pract 1996;43:56-62.

Stephenson J., *Icelandic researchers are showing the way to bring down rates of antibiotic-resistant bacteria.* JAMA 1996;275:175.

Editors (404) 639-2215

Scott Dowell
Lela F. Folkers
Benjamin Schwartz

Editorial Committee

Fred Angulo
C. L. Coleman
Lynne McIntyre

DEPARTMENT OF HEALTH & HUMAN SERVICES

Centers for Disease Control
and Prevention (CDC)
Atlanta, GA 30333

Official Business

Penalty for Private Use \$300

Address Correction Requested

FIRST-CLASS MAIL
POSTAGE & FEES PAID
PHS/CDC
Permit No. G-284